

DW-SRF 2012 Project

Proposal for Green Project Reserve Methodology using format from EPA's • June 22, 2009 guidance for GPR business cases

ESTIMATE OF VALUE OF WATER LOSS WORKSHEET

SRF PROJECT ID #	2012-05
1 Date:	23-Oct-12
2 PWSID #	ME00090290
3 System	Calais Water Department
4 Project Name	Main Replacement Project
5 Location	Clark & School Streets
6 Engineering Consultant	Olver Associates
7 Existing Main size, age, and type	2" Galvanized iron
8 Proposed New Water Main size and type	8" Ductile Iron cement lined pipe
9 New Main Pipe Length	1,940
10 Estimated Project Cost	\$ 366,000

Note: Data from Utilities Annual Report (2008) to Maine Public Utilities Commission

<u>Page</u>	<u>Line</u>	<u>Description</u>	<u>Units</u>	<u>2011 data</u>
W-12	15	Total Production Water	gallons per year	98,930,000
W-12	17	Total Revenue Water	gallons per year	66,824,000
W-12	19	Total Non-Revenue Water	gallons per year	32,106,000
W-12	19	Percent Non-Revenue Water		32%
W-12	22	Utility Usage - treatment	gallons per year	-
W-12	23	Utility Usage - hydrant flushing	gallons per year	3,926,000
W-12	14	Utility Usage - bleeders	gallons per year	2,596,000
W-12	26	Utility Usage - all other (running customers & blow-offs)	gallons per year	6,082,000
W-12	30	Fire Protection	gallons per year	9,340,000
W-12	31	Main Breaks	gallons per year	6,543,000
W-12	35	Flushing Mains	gallons per year	-
W-12	36	Total Accounted for Non-Revenue Water	gallons per year	28,487,000
W-12	37	Total Unaccounted Non-Revenue Water	gallons per year	3,619,000
Estimated Water Loss From ALL Breaks, Leaks, & Bleeders			gallons per year	18,840,000
<i>(PUC Accounts total of lines 14, 26,31,35 and 37)</i>				
% of Water Loss of Total Production Water				19%
<i>(PUC Lines 14,26,31,35,37 divided by Line 15)</i>				
W-9	9	Total Transmission Mains	feet	2,630
W-9	23	Total Distribution Mains	feet	121,027
		Total Mains in Service	feet	123,657
			miles	23
<u>Estimated Distribution System Losses:</u>				
		Loss Water per mile of pipe	gallons per mile per year	804,445
		Loss Water per foot of pipe per year	gallons per foot per year	152
		Loss water per foot of pipe per day	gallons per foot per day	0.42
<u>Water loss will vary with age of water main - assume Straight line projection as follows:</u>				
		0 to 25 year old pipe	0 % of Total Loss	gallons per mile per year -
		26 to 50 year old pipe	10% of Total Loss	gallons per mile per year 80,444
		51 to 75 year old pipe	30% of Total Loss	gallons per mile per year 241,333
		over 75 year old pipe	60% of Total Loss	gallons per mile per year 482,667
			All Loses:	804,445
		Age of Main to be replaced	years	100
		Length of Main to be Replaced	mile	0.37
CALCULATED WATER LOSS - FOR PROPOSED PROJECT			gallons per year	177,343
W-2	29c	Total PRODUCTION COST of Water	\$/year	\$ 411,367
W-12	15	Total Production Water	1,000 gallons per year	98,930
		Production Cost of Water	per 1,000 gallons	\$ 4.16
PROJECTED ANNUAL VALUE of WATER LOSS			per year	\$ 737

Annual Savings	\$	737
PV Factor (uniform series present worth factor (1%, 75 years):	\$	52.587
Present Value of Savings over Economic life of pipeline:	\$	38,779
Project Cost	\$	366,000
PV Percent of Project Cost:		10.6%

ESTIMATED % Green	10.6%
\$ Amount Green	\$ 38,779